

REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-10 and 12-29 are presently active in this case.

In the outstanding Office Action, Claims 1-10 and 12-19 were rejected under 35 U.S.C. §103(a) as unpatentable over McDowell et al. (U.S. Patent No. 4,463,605, hereinafter "McDowell") in view of Pages (U.S. Patent No. 5,774,818).

The outstanding rejection is respectfully traversed.

Claim 1 recites in part:

- a navigation computer comprising:
 - a first input configured to receive guidance instructions including heading, vertical speed, and altitude,
 - a second input configured to receive guidance parameters, and
 - an output configured to output automatic pilot instructions computed by said navigation computer from said guidance instructions;
- a flight control computer comprising:
 - a first input configured to receive control instructions,
 - a second input configured to receive said automatic pilot instructions, and
 - a command generator configured to generate a first plurality of operating commands based on said automatic pilot instructions in an automatic pilot mode; and
- a dedicated communication link configured to transmit the automatic pilot instructions from the navigation computer to the flight control computer.

The outstanding Office Action cited autopilot 14 of McDowell as "a navigation computer" and CSEU 16 of McDowell as "a flight control computer." Link 52 of McDowell was cited as "a dedicated communication link configured to transmit the automatic pilot instructions from the navigation computer to the flight control computer." However, the link 52 of McDowell does not provide "automatic pilot instructions," but instead provides the

command signals for the secondary surfaces. Thus, although CSEU 16 may create electrical command signals in response to the pilot controls 48, the autopilot 14 provides the electrical command signals itself when the autopilot is active. Thus, when the autopilot is active, CSEU 16 does not compute anything, it simply passes the command signals directly to the secondary surface actuators 42.

For example, McDowell states, “The electrical command signals produced by CSEU 16 are derived indirectly from either secondary pilot controls 48, such as the spoiler/speed brake lever shown coupled to CSEU 16 by dotted line linkage 50, *or from autopilot 14 in the form of electrical control signals communicated over bus 52.*”¹ Further, “As mentioned, position command signals for the secondary control surfaces are produced by CSEU 16, either in response to manual pilot controls 48, *or indirectly by autopilot 14* (FIG. 2). In the latter case, *the autopilot 14 is the source of such command signals for deploying the secondary surfaces*, such as the spoilers, in coordination with primary surfaces such as the ailerons for augmenting the flight control functions of the primary surfaces in a manner well known in the design of aircraft controls.”²

Thus, link 52 of McDowell does not provide “automatic pilot instructions” to CSEA 16 of McDowell for CSEA 16 to create a first plurality of operating commands based on. CSEA 16 simply passes command signals received from autopilot 14 over link 52 to the secondary surface actuators 42. Therefore, autopilot 14 of McDowell is presumably calculating both guidance and automatic pilot instructions, burdening the autopilot 14 with both critical path processing tasks. In the invention recited in Claim 1, a navigation computer generates the guidance instructions and a flight control computer generates the automatic pilot instructions. The guidance instructions are sent from the navigation computer to the flight control computer over a dedicated link. Thus, no single computer is burdened with

¹McDowell, column 6, lines 29-35.

²McDowell, column 6, lines 39-48.

both tasks, and the guidance instructions are sent to the flight control computer as quickly as possible. McDowell does not teach or suggest such an apparatus.

Thus, McDowell does not teach or suggest “a dedicated communication link” as defined in Claim 1.

Further, the Office Action conceded that autopilot 14 of McDowell (cited as “a navigation computer”) does not include “a first input” or “a second input” as defined in Claim 1. The outstanding Office Action apparently cited automatic piloting device 13 as “a navigation computer” including such first (from 12-13) and second (from 15) inputs.

Initially, it is respectfully noted that no part of the device described by Pages receives an input from 12-13 and an input from 15. Thus, Pages does not teach or suggest “a first input” and “a second input” as defined in Claim 1.

Assuming *arguendo* that the automatic piloting device 13 of Pages is cited as “a navigation computer,” it is respectfully noted that the automatic piloting device 13 of Pages provides control instructions to actuators 14, and thus does not include “an output configured to output automatic pilot instructions computed by said navigation computer from said guidance instructions.” Accordingly, automatic piloting device 13 of Pages is not “a navigation computer” as defined in Claim 1.

Further, Pages also does not teach or suggest “a dedicated communication link configured to transmit the automatic pilot instructions from the navigation computer to the flight control computer” as recited in Claim 1.

As neither McDowell nor Pages teaches or suggests “a navigation computer” or “a dedicated communication link” as recited in Claim 1, Claim 1 (and Claims 2-10 dependent therefrom) is patentable over McDowell in view of Pages.

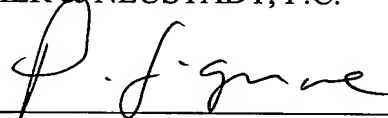
Claims 12 and 21 recite similar elements to Claim 1. Accordingly, Claims 12 and 21 (and Claims 13-20 and 22-29 dependent therefrom) are patentable over McDowell in view of Pages for at least the reasons described above with respect to Claim 1.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 1-10 and 12-29 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicant's undersigned representative at the below listed telephone number.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Philippe J.C. Signore, Ph.D.
Attorney of Record
Registration No. 43,922

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)

Edward Tracy
Registration No. 47,998